(c) Remarks

The claims are 1-3 and 16-19 with claims 1-3 being independent. The subject matter of claims 4 and 7 is added to claim 1; the subject matter of claims 5 and 8 is added to claim 2 and the subject matter of claims 6 and 9 is added to claim 3 and claims 4-9 are cancelled. Claims 1-3 were also amended to better define the intended invention. Nonelected claims 10-15 were cancelled without prejudice or disclaimer. Reconsideration of the claims is requested.

Claims 1-9 were rejected under Rule 112, first paragraph. Without agreeing or disagreeing and solely to expedite prosecution, independent claims 1-3 were amended as suggested by the Examiner to provide that R_1-R_{16} is hydrogen, methyl or phenyl. Accordingly, the objection having been resolved, it should be withdrawn.

Claims 1-9 were rejected as obvious over EP 1097980 (EP '980) based upon, *inter alia*, compound RN #338734-80-8 (also identified herein as compound X or the compound of Example 4 of EP '980). The Examiner also admits EP '980 teaches compounds with a fluorenyl group attached at a different position than that of applicants' compounds. The grounds of rejection are respectfully traversed.

Applicants will show that the cited prior art (EP '980) is not an enabling disclosure since one of ordinary skill in the art could not make or synthesize the named compound RN #338734-80-8 therein at the time of the present invention. In addition, applicants will show that a difference in bonding site of the fluorenyl group affects the performance of the claimed invention.

First, under MPEP sections 716.07 and 2121.02 applicants have provided evidence that a process for making the compound RN #338734-80-8 was not available at the time of the invention. In the attached Rule 132 Declaration of Koichi Suzuki, a Ph.D. who has long experience in synthesizing fused compounds as bathophenanthrolines, the synthesis of RN #338734-80-8 was attempted in accordance with the disclosure of Example 4 of EP 1097980 with trivial changes which did not affect the results. The product recovered was analyzed and did not conform to the desired compound.

Compound RN #338734-80-8 (also known as Compound "X") was also attempted to be synthesized by other known methods based on EP '980, including the Suzuki coupling method using a palladium catalyst and via a phenanthroline intermediate as cited on page 26, lines 2-10 of the present application. However, such syntheses were unsuccessful.

Applicants believe that the synthesis of Compound X in Example 4 of EP '980 is not possible because fluorene in the 9-position of Compound X has a large steric hindrance which does not favor bonding at that position. The large flanking fused phenyl groups of the fluorene are ortho to the -CH-bonding position and interfere with the link to the phenanthroline skeleton. It is believed that rotation of the fluorene molecule during attempted linking is inhibited.

To the contrary, the present claimed compounds are joined by bonding one of the flanking phenyl groups of the fluorene to the phenanthroline skeleton. Rotation of the fluorene molecule upon bonding to the phenanthroline is possible, thus enabling bonding to occur.

Secondly, in the phenanthroline compound of the present invention the phenanthroline skeleton is substituted with a desired group, such as a fluorenyl or fluoranthenyl group, at a position such that conjugation extends over the entire molecule. This feature results in better electron transporting properties and provides a device having the instant compounds with enhanced performance such as high efficiency, high luminance, and high durability.

To the contrary, EP '980, and the corresponding U.S. Patent No. 6,972,334, teach a bathophenanthroline compound in which the skeleton is substituted with fluorenyl groups at the 9-position of the fluorenyl group. This feature is shown in Compounds 133-137 of U.S. Patent No 6, 972,334 and similar substitution is shown through a methylene bonding group for Compounds 173-176. In such compounds the respective phenanthroline and fluorene rings are bonded through a CH group and, therefore, are not conjugated. Accordingly, it is understood that such compounds' electron transporting property, when formed into a thin film, is very low.

Claims 16-19 should be rejoined since they are directed to a combination which includes the instant sub-combination. There is no showing by the Office that the instant compounds lose their unique properties when added as a layer to a device.

Wherefore, the claims should be allowed and the case passed to issue.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our below listed address.

Respectfully submitted,

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